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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/325,110	06/03/1999	CARL S. ANSELMO	PD-990033	2415

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THE DIRECTV GROUP INC
PATENT DOCKET ADMINISTRATION RE/R11/A109
P O BOX 956
EL SEGUNDO, CA 90245-0956

EXAMINER
CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
2685	19

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)	
Office Action Summary	09/325,110		ANSELMO, CARL S.	
	Examiner		Art Unit	
	Charles Chow		2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/20/2004*.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-13 and 15-31* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-8,10-13 and 15-31* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *18; 1/28/04*.
4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. ___ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

Office Action for Amendment
Received on 1/21/2004

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 3-7, 10-13, 15-17, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2001/0034,206 A1) in view Brown et al. (US 6,157,621).

Regarding **claim 1**, Thompson et al. (also as Thompson in below) teaches a system [0012] for providing high frequency data communications (using Ku band antenna in [0016-0017]), plurality of communication satellites [0002], each having uplink and downlink antenna for receiving and transmitting plurality signals (two c-band and four ku-band antenna [0032], the uplink and downlink for reconfigurable payload satellite [0033]). Thompson teaches the communication control circuit (as shown in Fig. 3-4, [0040-0042]; Fig. 8, [0053-0054]). Thompson teaches the reconfigurable satellite (abstract, his claims 1, 7, 8, 11-16) having programmable frequency synthesizer couple to the control circuit (synthesizers 26, 28, [0047]; the control circuit of switches s1, s2 in [0039], the switching system in [0052]). Besides, Thompson teaches input multiplex IMUX and output multiplex OMUX [0011, 0049-0050]. Thompson does not clearly teach the controller located on the satellite, and a routing table storing tuning information. Brown et al. (also as Brown in below) teaches the controller 1102 (fig. 83) on board of a satellite for controlling communication (as shown in

col. 45, lines 31-36). Brown teaches the routing table having the synthesizer tuning

information; the on-board computer (adaptive routing processor) for a satellite

communication apparatus and system for handling large capacity (abstract, figure in cover

page, summary of invention). Brown teaches in Fig. 37, the routing information is stored in

the cache memory 420. In Fig. 85, 86, Brown considered the utilization of the routing table

1120 for the routers. In Fig. 27, 28 Brown considered the synthesizer 284, 308, in the

reconfiguring circuit, for tuning to the frequency according to the routing table above. Brown

considered the utilization of the on-board computer, the adaptive routing processor for

selecting the best route pathway according to routing table (col. 17, line 8-42; col. 43, line 46

to col. 44, line 9). Brown provides the solution for selecting of the best routing path utilizing

the route table information to change the synthesizer frequency tuning, as shown above, such

that the route could be the best path. Brown teaches the solution to select the best route path

utilizing the route table information to change the synthesizer frequency tuning. Therefore, it

would have been obvious to one of ordinary skill in the art at the time of invention to modify

Thompson and to include Brown's solution, such that the best route path could be selected.

Regarding the routing table having tuning information to control the frequency

reconfiguration of the control circuit through the synthesizer, Brown teaches the routing

switch 1302 carries a channel designation 1306 that specifies time slot, frequency, coding

scheme for routing packet data, and the transmitter 1310 determines the frequency to be used

for transmission of packet data based on the selected channel (col. 10, lines 33-38). Brown

teaches the synthesizer 284, 308 (Fig. 28), 1310 determines the frequency to be used for

transmission of packet data based on the selected channel (col. 10, lines 33-38). Brown

teaches the synthesizer 284, 308 (Fig. 28), 1032 (Fig. 81) and routing table 1120 (Fig. 86).

Brown teaches the assigning of different channels for fixed terminal/satellite link which is

different from the mobile terminal/satellite link (col. 35, lines 23-31). Thompson teaches in

[0029] a reconfigurable satellite with broadband flexible antenna coverage necessary in a

reconfiguration spacecraft, for receiving and transmitting any of the desired uplink and

downlink frequencies. Thompson teaches the synthesizer frequency tuning [0046-0047] for

mapping uplink frequencies to the downlink frequencies in order to be reconfigurable to

provide services to various customers for various frequency plans [0006-0007] by utilizing

three technologies [0008], the variable down converter with various frequency selection

[0010], the selectable uplink and downlink frequency plan of the routing table [0014].

Regarding **claim 3**, referring to Thompson above for the up converter and down converter for

the communication control circuit [0035].

Regarding **claim 4**, referring Thompson above for a transponder (repeater in [0053],Fig. 7-8)

for the circuit for receiving uplink signal and transmitting downlink signal [0047].

Regarding **claim 5**, referring to Thompson above [0035, 0047, fig. 7-8] for the transponder

and the up converter and down converter.

Regarding **claim 6**, Brown has taught above for the time division multiple access switch (

col. 61, lines 24-31).

Regarding **claim 7**, referring to Brown above for the packet switch 1306 (Fig. 112A; col. 60,

line 65 to col. 61, line 11).

Regarding **claim 15**, Thompson teaches in above the reconfigurable satellite payload circuit

having receiving array/transmitting array (Fig. 8, receiving antenna ports, transmitting

antenna ports). Thompson teaches the beam forming network [0054, the network 34

combines received beams in any desired combination for flexible antenna coverage, for down

link], the programmable synthesizer.

Thompson does not clearly teach the controller located on the satellite, and a routing table

storing tuning information. Brown teaches the controller 1102 (Fig. 83) on board of a satellite

for controlling communication (as shown in col. 45, lines 31-36). Brown teaches the routing

table having the synthesizer tuning information, the on-board computer (adaptive routing

processor) for a satellite communication apparatus and system for handling large capacity

(abstract, figure in cover page, summary of invention), the handling large capacity (abstract,

figure in cover page, summary of invention). Brown teaches in Fig. 37, the routing

information is stored in the cache memory 420. In Fig. 85, 86, Brown considered the

utilization of the routing table 1120 for the routers. Brown considered the utilization of the

on-board computer, the adaptive routing processor for selecting the best route pathway

according to routing table (col. 17, line 8-42; col. 43, line 46 to col. 44, line 9). Brown

provides the solution for selecting of the best routing path utilizing the route table

information to change the synthesizer frequency tuning, as shown above, such that the route

could be the best path. Brown teaches the solution to select the best route path utilizing the

route table information to change the synthesizer frequency tuning. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of invention to modify Thompson

and to include Brown's routing table for best routing path, such that the best routing path

could be efficiently selected.

Regarding applicant's argument for the no teachings for the routing table having tuning

information to control the frequency reconfiguration of the control circuit through the

synthesizer, Brown teaches the routing switch 1302 carries a channel designation 1306 that

specifies time slot, frequency, coding scheme for routing packet data, and the transmitter

1310 determines the frequency to be used for transmission of packet data based on the

selected channel (col. 10, lines 33-38). Brown teaches the synthesizer 284, 308 (Fig. 28),

1032 (Fig. 81) and routing table 1120 (Fig. 86). Brown teaches the assigning of different

channels for fixed terminal/satellite link which is different from the mobile terminal/satellite

link (col. 35, lines 23-31). Thompson teaches in [0029] a reconfigurable satellite with

broadband flexible antenna coverage necessary in a reconfiguration spacecraft, for receiving

and transmitting any of the desired uplink and downlink frequencies. Thompson teaches the

synthesizer frequency tuning [0046-0047] for mapping uplink frequencies to the downlink

frequencies in order to be reconfigurable to provide services to various customers for various

frequency plans [0006-0007] by utilizing three technologies [0008], the variable down

converter with various frequency selection [0010], the selectable uplink and downlink

frequency plan of the routing table [0014].

Regarding **claim 16**, refer to Brown in claim 6 above for the time multiple access switch.

Regarding **claim 17**, refer to Brown in claim 7 for the packet switch.

Regarding **claim 28**, Thompson has taught above for a method of reconfiguring a satellite

from a operator's control for communicating with satellite for reconfiguration of the satellite

payload , and the programmable synthesizer having the frequency tuning information

([0005-0006]). Thompson does not clearly teach the routing table. Brown teaches the routing

table above, having the synthesizer tuning information; the on-board computer(adaptive

routing processor) for a satellite communication apparatus and system for handling large

capacity (abstract, figure in cover page, summary of invention). In Fig. 37, the routing

information is stored in the cache memory 420. In Fig. 85, 86, Brown considered the

utilization of the routing table 1120 for the routers. In Fig. 27, 28 Brown considered the

synthesizer 284, 308, in the reconfiguring circuit, for tuning to the frequency according to the

routing table above. Brown considered the utilization of the on-board computer, the adaptive

routing processor for selecting the best route pathway according to routing table (col. 17, line

8-42; col. 43, line 46 to col. 44, line 9). Brown teaches the solution for selecting of the best

routing path utilizing the route table information to change the synthesizer frequency tuning,

as shown above, such that the route could be the best path. Brown teaches a solution to select

the best route path utilizing the route table information to change the synthesizer frequency

tuning. Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to modify Thompson and including Brown's routing table, best routing path, such

that the best routing path could be efficiently selected.

Regarding the reconfiguring the frequency configuration of the payload of the reconfigurable

satellite in response to the tuning information in a routing table, Thompson teaches in [0029]

a reconfigurable satellite with broadband flexible antenna coverage necessary in a

reconfiguration spacecraft, for receiving and transmitting any of the desired uplink and downlink frequencies. Thompson teaches the synthesizer frequency tuning [0046-0047] for mapping uplink frequencies to the downlink frequencies in order to be reconfigurable to provide services to various customers for various frequency plans [0006-0007] by utilizing three technologies [0008], the variable down converter with various frequency selection [0010], the selectable uplink and downlink frequency plan of the routing table [0014].

Regarding **claim 29**, referring to Brown above in claim for the amplitude or phase changing due to tuning.

Regarding **claims 30, 31,** referring to claim 1 above Brown teaches the constantly updating of the route information in the cache memory and receive route information for the updating the routing table from order wire, from RF control channel (col. 43, line 46 to col. 44, line 9; col. 49, lines 10-20).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Brown, and further in view of Wiswell et al. (US 6,205,319 B1).

In the above, it does not teach the beam forming network.

Regarding **claim 2**, Wiswell et al. (also as Wiswell in below) teaches, the comprising a beam forming network coupled to uplink and downlink antenna (front figure, the receive/transmit beam phased array 102-108, 120-126; up/down converter 110) for the selectively adjusting of the amplitude and phase antenna beam for receiving/transmitting information (abstract, col. 1, lines 5-9; col. 2, lines 27-30), using ewer multi-beam antennas (col. 1, line 65 to col. 2,

line 2; col. 2, lines 8-15), such that the satellite can reduce the payload complexity, and the

power requirement using fewer beam antennas. Therefore, it would have been obvious to one

of ordinary skill in the art at the time of invention to modify Thompson above and to include

Wiswell's fewer beam phased array antennas for receiving and transmitting, such that the

satellite payload would be efficient, with less complexity and save power requirement.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view

Brown, and further in view of Galvin (US 6,182,927 B1).

In the above, it does not include the satellites for LEO, MEO, GSO

Galvin teaches, **claim 8**, the satellites for LEO, MEO, GSO (col. 6, lines 34-54, the low earth

orbit satellites 50, GEO 52, the MEOs in Fig 6) for improving the satellite navigation

accuracy (col. 2, line 47). Galvin teaches the efficient method to add the augmentation

satellites in LEO, or MEO or GEO, the navigation accuracy could be improved (col. 6, lines

34-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to modify Thompson above and to include Galvin's adding different augmentation

satellites, such that the system could be provide the navigation accuracy.

4. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in

view of Reesor (US 4, 472,720).

Regarding claim 18, Thompson has taught above a method for configuring a satellite having

plurality of satellites and the deploying the back up satellite from the communication control

from the operator instruction for flexibly reconfiguring of a satellite, with the programmable

synthesizer. Thompson does not clearly teaches the repositioning a satellite, However,

Reesor teaches the repositioning a satellite from a network and moving the reconfigurable

satellite into the network position (repositioning of the satellite based upon the phase error

detected from the tone transmitted from the master satellite to the slaved satellites, abstract,

front figure, Reesor's claim 2, repositioning satellites determined by correction signal). To

synchronize the phase of the received signal to improve the signal quality is obviously a

essential features to be included, such that the phase error could be reduced by repositioning

the satellites. Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify Thompson above and to include Reesor's repositioning,

reconfiguring the positions of satellites, such that the phase error could be reduced.

Regarding the reconfiguring the frequency configuration of the payload of the reconfigurable

satellite in response to the tuning information in a routing table, Thompson teaches in [0029]

a reconfigurable satellite with broadband flexible antenna coverage necessary in a

reconfiguration spacecraft, for receiving and transmitting any of the desired uplink and

downlink frequencies. Thompson teaches the synthesizer frequency tuning [0046-0047] for

mapping uplink frequencies to the downlink frequencies in order to be reconfigurable to

provide services to various customers for various frequency plans [0006-0007] by utilizing

three technologies [0008], the variable down converter with various frequency selection

[0010], the selectable uplink and downlink frequency plan of the routing table [0014].

Regarding **claim 19**, refer to Thompson above in claim 1, for the changing of the up/down

frequency of the up/down converters for the repeater.

Regarding **claim 20**, refer to Thompson in claim 1 above, which also provides the claimed

features for the changing of the frequency in a programmable synthesizer.

5.   Claims 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in

view of Reesor, and further in view of Brown-'621.

Regarding **claim 21**, Brown has taught above the steering antenna and phase shift (col. 14,

line 51 to col. 15, line 5) and the beam forming 554/568, beam compensation (Fig. 42, col.

19, lines 15-40).

Regarding **claim 22**, Brown has taught above in claim 1 for the tuning information in the

route table.

Regarding **claim 23**, Brown has taught above for the steering antenna, phase shift, the beam

compensation for the changing of amplitude or phase of a beam, and Brown has taught above

the tuning information in the route table.

Regarding **claims 24, 25**, referring to Brown in claim 1 above for the maintaining of the

spacecraft's orientation for the east/west, north/south station keeping (col. 30, lines 7-20);

Regarding **claims 26, 27**, referring to claim 1 above Brown teaches the constantly updating

of the route information in the cache memory and receive route information for the updating

the routing table from order wire, from RF control channel (col. 43, line 46 to col. 44, line 9;

col. 49, lines 10-20).

Response to Argument

6. Applicant's arguments filed 1/21/2004 have been fully considered but they are not

persuasive.

Regarding applicant's argument for the no teachings for the routing table having tuning

information to control the frequency reconfiguration of the control circuit through the

synthesizer, Brown teaches the routing switch 1302 carries a channel designation 1306 that

specifies time slot, frequency, coding scheme for routing packet data, and the transmitter

1310 determines the frequency to be used for transmission of packet data based on the

selected channel (col. 10, lines 33-38). Brown teaches the synthesizer 284, 308 (Fig. 28),

1032 (Fig. 81) and routing table 1120 (Fig. 86). Brown teaches the assigning of different

channels for fixed terminal/satellite link which is different from the mobile terminal/satellite

link (col. 35, lines 23-31). Thompson teaches in [0029] a reconfigurable satellite with

broadband flexible antenna coverage necessary in a reconfiguration spacecraft, for receiving

and transmitting any of the desired uplink and downlink frequencies. Thompson teaches the

synthesizer frequency tuning [0046-0047] for mapping uplink frequencies to the downlink

frequencies in order to be reconfigurable to provide services to various customers for various

frequency plans [0006-0007] by utilizing three technologies [0008], the variable down

converter with various frequency selection [0010], the selectable uplink and downlink

frequency plan of the routing table [0014].

In view of the above disclosures, claims 1-8, 10-13, 15-31 are remaining in the rejection

~~manner.~~

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy

as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS

from the mailing date of this action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action is not mailed until after the end

of the THREE-MONTH shortened statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Edward Urban, can be reached at (703)-305-4385.

Any response to this action should be mailed to:

> Commissioner of Patents and Trademarks

> Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the Technology Center 2600 Customer Service Office

whose telephone number is (703) 306-0377.

Charles Chow *C. C.*

March 19, 2004.
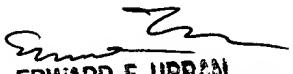
EDWARD F. URBAN
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TECHNOLOGY CENTER 2600